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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/901,592	07/11/2001	William Holm	0104-0354P	7653
2292	7590	01/22/2004	EXAMINER FULLER, ERIC B	
BIRCH STEWART KOLASCH & BIRCH PO BOX 747 FALLS CHURCH, VA 22040-0747			ART UNIT	PAPER NUMBER

1762

DATE MAILED: 01/22/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/901,592

Applicant(s)

HOLM ET AL.

Examiner

Eric B Fuller

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 03 November 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-8, 19, 20 and 31-36 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-8, 19, 20 and 31-36 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

## Priority under 35 U.S.C. §§ 119 and 120

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☒ All b) ☐ Some \* c) ☐ None of:  
1. ☒ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.  
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_ 6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 3, 4, 7, 8, 19, 20, and 31-33 are rejected under 35 U.S.C. 102(b) as being anticipated by Fuller et al. (US 3,962,487).

Fuller teaches a method where viscous material (table 1) is screen printed onto a substrate at predetermined locations (column 3, lines 29-35). The solderability of the screen printed layer is improved by flame spraying an additional viscous coating (column 4, lines 25-63). Flame spraying reads on applicant's "jetting" as defined in the specification. As to the dependent claims, the realization of the solderability needing improvement reads on determining an error and improving the solderability reads on correcting it. Inspection inherently occurs in order to determine that the solderability needs improvement. The viscous material that is screen printed is different than the material applied by jetting.

As to newly added claims 31-33, a spray inherently comprises many individual droplets.

### ***Claim Rejections - 35 USC § 103***

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The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 2 and 5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fuller et al. (US 3,962,487).

The limitations to claim 1 are taught by Fuller. As to claim 2, the reference fails to explicitly teach further determining errors after the jetting step and correcting them if they exist. However, since the reference is concerned with achieving a certain level of solderability, it is the position of the examiner that it would have been obvious at the time the invention was made to a person having ordinary skill in the art to determine if the solderability of the coating was sufficient and if it was not, to apply more solderability-improving material. By doing so, one would reap the benefit of achieving the desired solderability.

As to claim 5, the reference is silent to the flame spraying step being performed by a single apparatus. However, is the position of the examiner that as only a single material is being flame sprayed onto the substrate and the substrate is a disk having a diameter of less than an inch, it would have been obvious to use only one spray device, as cross contamination of materials and the size of the deposition area are not an issue.

Claim 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Fuller et al. (US 3,962,487), as applied to claims 2 or 3 above, and further in view of Itsuji (US 5,151,299).

Fuller teaches the limitations of claim 1, but fails to teach the correcting step comprises removing some of the material. However, Itsuji teaches screen printing often results in the deposited material being blurred at the edges (column 1, lines 25-33). This is corrected by removing some of the material such that the edges are more defined (column 1, lines 44-63). Therefore, it would have been obvious at the time the invention was made to a person having ordinary skill in the art to remove some of the coating in Fuller such that the edges of the deposited material are better defined and not blurred.

Claims 31-36 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fuller et al. (US 3,962,487), as applied to claims 1, 19, or 20 above, and further in view of Teague (US 3,689,987).

Fuller teaches the limitations of claims 1, 19, and 20, as shown above, but is silent to the creation of individual particles of predetermined volumes. However, Teague teaches a flame spraying process that comprises individual droplets of predetermined volumes in order to control parameters of the coating, such as grain and spot size (column 1, lines 62-67). Therefore, it would have been obvious at the time the invention was made to a person having ordinary skill in the art to use individual droplets of predetermined volumes in the flame spraying process taught by Fuller. By doing so,

one would reap the benefits of controlling parameters of the coating, such as grain and spot size.

### ***Response to Arguments***

Applicant argues that flame spraying and jetting are not the same. This is not found persuasive. Applicant has defined "jetting" as "a non-contact dispensing process that utilizes a fluid jet to form and shoot droplets of a viscous medium from a jet nozzle onto a substrate". Flame spraying certainly reads on this definition. As evidence, the examiner points to Teague, as provided above, and Notaro (US 4,239,827). Teague teaches in the examples a flame spraying process that reads on applicant's definition of jetting. Notaro teaches in column 4, lines 11-31, a flame spraying process that reads on jetting, as defined by the applicant.

Applicant argues that Fuller does not explicitly teach an inspection step. This is not found persuasive. An inspection step is inherently required in order to determine that the coating requires an improvement in solderability. The applicant further argues that the errors in Fuller may be predetermined, such that an inspection step is not required to perform the process. This is not found persuasive, as an inspection step was inherently required in the original performance of the process in order to predetermine the errors for subsequent process runs.

***Conclusion***

Applicant's amendment necessitated the new grounds of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Eric B Fuller whose telephone number is (571) 272-1420. The examiner can normally be reached on Mondays through Thursdays.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Shrive P Beck, can be reached at (571) 272-1415. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.

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EBF

A handwritten signature in black ink, appearing to be 'Shrive P. Beck', with a long horizontal flourish extending to the right.

**SHRIVE P. BECK**  
**SUPERVISORY PATENT EXAMINER**  
**TECHNOLOGY CENTER 1700**